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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/521,225	07/06/2005	Archie W. Garner	13015/38719BUS	7214

4743 7590 02/13/2008
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EXAMINER

GILLESPIE, BENJAMIN

ART UNIT	PAPER NUMBER
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1796

MAIL DATE	DELIVERY MODE
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02/13/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/521,225

Applicant(s)

GARNER ET AL.

Examiner

Benjamin J. Gillespie

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/13/2007 has been entered.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

2. Claims 1-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The language "a partially branched hydroxy-terminated oligoester" render the claims indefinite because "partially" is a relative term.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over McBain et al ('053) in view of Bristowe et al ('837). McBain et al teach a gel coat composition comprising a urethane gel coat resin having terminal acrylate groups. The urethane resin is the reaction

product of hydroxyl-terminated oligoester, polyisocyanate and hydroxyalkyl (meth)acrylate (Abstract; col 7 lines 1, 26-30; and col 10 lines 24-26). In particular, the oligoester is the reaction product of hexanediol, neopentyl glycol and adipic acid, and has a molecular weight between 1,500 and 2,500 (Col 2 lines 37, 44-59). The polyisocyanate preferably consists of isophorone diisocyanate, and the hydroxyalkyl (meth)acrylate consists of hydroxyethyl acrylate (Col 3 lines 4, 7, and 9). The oligoester, diisocyanate, and hydroxyethyl acrylate is further disclosed to exist in molar amounts consisting of 1:2:2 respectively (Col 2 lines 65-67; col 3 lines 1-7). The structure of claim 2 would inherently be possessed by the polyurethane disclosed by McBain et al based on the shared stoichiometry and the reactive nature of OH and NCO functional groups.

4. Patentees go on to disclose the gel coat composition contains, in addition to the resin, other ingredients comprising free radical initiators, which are utilized in polymerization, and pigments. The gel resin is co-present with these components in an amount of 33% by weight of the total composition (Col 4 lines 56, 59-61; col 5 lines 12-16; col 7 lines 60-66; col 8 lines 1-18). Finally, McBain et al teach the gel coating composition to prepare exterior automotive body panels, which is then cured (Col 7 lines 16-20). However, McBain et al fail to teach a method of production wherein the oligoester is combined with the hydroxyalkyl (meth)acrylate before the addition of diisocyanate.

5. Bristowe et al teach an acrylate-terminated urethane coating composition comprising oligoester, isophorone diisocyanate, and hydroxyethyl acrylate (Abstract; col 2 lines 1-9, 35-36; col 4 lines 42; and col 5 line 35). Bristowe et al go on to teach a preferred method of production wherein the oligoester is blended with the hydroxyethyl acrylate, forming an intermediate and

then reacted with diisocyanate (Col 5 lines 67-68; col 6 lines 1-7). Bristowe et al explain that the disclosed method allows for better control of the exothermic reaction and minimizes the formation of by-products without substantially affecting the nature of the resulting vinyl ester urethane (Col 6 lines 17-22). Therefore it would have been obvious to one of ordinary skill within the art at the time of invention to utilize the preferred method of Bristowe et al in McBain et al based on the motivation that both teach vinyl functional urethane esters having analogous backbone architecture, and the method of Bristowe et al allows for better control of reaction conditions and while producing an improved product.

6. Finally regarding applicants' claimed isocyanate content, although McBain et al do not discuss said content, Bristowe et al teach in examples 4-8 that urethane acrylates based on corresponding stoichiometries result in compounds having "no residual isocyanate." Therefore, based on the logic set forth above to utilize the method of Bristowe et al in McBain et al, one of ordinary skill would reasonable expect that the resulting urethane acrylate would have "no residual isocyanate," which is taken to satisfy applicants' claimed content.

7. Claims 1-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomotsugu et al ('613) in view of Bristowe et al ('837). Tomotsugu et al teach a urethane acrylate resin comprising the reaction product of hydroxy-functional polyester, polyisocyanate, and 2-hydroxyethyl (meth)acrylate. (Abstract; col 2 lines 64-68; col 3 lines 1-13). In particular, patentees explain that the polyester polyol is the reaction product of aliphatic cyclohexane-dicarboxylic acid, and a mixture of diol and triol, specifically 60-100% diol and 0-40% triol, wherein said diol consists of compounds such as butanediol, neopentyl glycol, and pentanediol, and said triol consists of glycerol and trimethylolpropane (Col 2 lines 30, 39-46, 54-53).

8. The resulting composition has no residual free isocyanate, and further contains additional components such as pigments and initiators (Col 4 lines 46-63; col5 lines 56-58). Finally, Tomotsugu et al teach that the resulting urethane acrylate is useful in coatings, however patentees fail to disclose a method of production wherein the polyester is combined with the hydroxyethyl (meth)acrylate before the addition of diisocyanate, or specify the resin as a "gel coat" (Claims 6 and 7).

9. Aforementioned, Bristowe et al teach an acrylate-terminated urethane coating composition comprising oligoester, isophorone diisocyanate, and hydroxyethyl acrylate (Abstract; col 2 lines 1-9, 35-36; col 4 lines 42; and col 5 line 35). Bristowe et al go on to teach a preferred method of production wherein the oligoester is blended with the hydroxyethyl acrylate, forming an intermediate and then reacted with diisocyanate (Col 5 lines 67-68; col 6 lines 1-7). Bristowe et al explain that the disclosed method allows for better control of the exothermic reaction and minimizes the formation of by-products without substantially affecting the nature of the resulting vinyl ester urethane (Col 6 lines 17-22).

10. Therefore it would have been obvious to one of ordinary skill within the art at the time of invention to utilize the preferred method of Bristowe et al in Tomotsugu et al based on the motivation that both teach vinyl functional urethane esters having analogous backbone architecture, and the method of Bristowe et al allows for better control of reaction conditions and while producing an improved product. Finally, regarding applicants' claimed "gel coat" limitation, although Tomotsugu et al fail to refer to the urethane acrylate composition as a "gel coat," based on analogous reactants, stoichiometries, and method of production, one would reasonably expect said urethane acrylate to exhibit the same properties as claimed by applicant.

Response to Arguments

11. Applicant's arguments, filed 12/13/2007, with respect to the rejection of claims 1-25 under 35 U.S.C. 103(a) have been fully considered, but are not persuasive. Applicants state that McBain et al in view of Bristowe et al fail to render obvious the claimed invention because there is no disclosure of triol in the formation of the polyester polyol, and therefore the prior art is not representative of the claimed invention. The examiner would like to point out that component (ii) of claims 1 and 22 are only limited to "one or more saturated triols or polyols," and the term "polyol" is commonly known in the art to encompass di-functional alcohols, such as diols; McBain et al in view of Bristowe et al still render obvious the claimed invention.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin J. Gillespie whose telephone number is 571-272-2472. The examiner can normally be reached on 8am-5:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

B. Gillespie


RABON SERGENT
PRIMARY EXAMINER